

Fluid flow parallel to the media surfaces produces continuous contact between the fluid and surface area of the media which, when covered with a biofilm, effects more efficient mass transfer of an organic or inorganic substrate within the biofilm thereby assisting retention, decomposition and/or biotransformation.

#### CLAIMS

1. A process for treating water containing organic matter by separating the organic matter from water by induced vertical vortices produced by interaction between flowing water and the eight vaned media structure.
2. A process for treating water containing inorganic matter by separating the inorganic matter from water by induced vertical vortices produced by interaction between flowing water and the eight vaned media structure.
3. A process for decomposing organic matter separated from water by induced vertical vortices produced by interaction between flowing water and the eight vaned media structure by introduced micro-organisms forming a biofilm on the media structure.
4. A process for retaining and biochemically transforming inorganic matter separated from water by induced vertical vortices produced by interaction between flowing water and the eight vaned media structure.
5. A process for decomposing organic matter flowing in water parallel to the eight vaned and cylindrical media structure surfaces by introduced micro-organisms forming a biofilm on the media structure.
6. A process for retaining and biochemically transforming inorganic matter flowing in water parallel to the eight vaned and cylindrical structure surfaces by introduced micro-organisms forming a biofilm on the media structure.

## CONTINUATION OF LIST OF DESCRIPTIONS

7. A process of application of this technology to blackwater [sewage] Bio-Septic Systems, LLC entered into an agreement to test blackwater remediation with the Environmental Protection Agency and Montana State University\Center for BioFilm Technology. *See;* Drawing of blackwater tank attached.
8. Adapted membrane technology for removal of heavy metals.
9. Membrane technology used without bacteriological charge for separation for differentiating fluids. Tested and certified on September 6, 1996 under Test No. 96-07-02895 by Plumbing and Draining Institute. Certificate and test specifications attached.

86041650 5894050  
add 91